When tested in accordance with method OHD L-28 the lime shall conform to the following requirements:

SIEVE SIZE	PERCENT PASSING
5/8 inch (16.0 mm)	95-100
No. 200 (75 µm)	0-15

706.03. BY-PRODUCT LIME.

By-product lime will be tested under the appropriate sections of ASTM C 25 to determine the available lime index (by rapid sugar method) expressed as available calcium hydroxide $Ca(OH)_2$.

Calculations will be based on the dry mass of the material. Sufficient by-product lime shall be required to provide an equivalent amount of available lime based on 90 percent availability per ton (metric ton) (dry mass) of hydrated lime.

706.04. AGRICULTURAL LIMESTONE.

Agricultural limestone shall be a high calcic or dolomitic limestone having a neutralization value of at least 80 percent of calcium carbonate. The neutralization value and sieve analysis shall be in accordance with ASTM C 602. The material shall be free from harmful quantities of toxic salts and other objectionable matter.

The fineness shall conform to the following requirements:

SIEVE SIZE	PERCENT PASSING
No. 4 (4.75 mm)	100
No. 8 (2.36 mm)	90-100
No. 60 (250 µm)	30-100

SECTION 707
MICRO SURFACING

707.01. DESCRIPTION.

These Specifications cover the materials for use in the construction of micro surfacing.

707.02. MATERIALS.

(a) **Approval of Materials.** Prior to use, samples of all materials proposed to be used under these Specifications shall be submitted to the Materials Division for tests. The mix design will be prepared by the contractor and submitted to the Materials Division, with applicable worksheets and data, for approval. The mix design shall comply with these Specification requirements and establish the job-

mix formula for the mixture. The job-mix formula shall establish a single percentage of residual asphalt for the mixture. Previous mix designs from the current calendar year may be used.

To substantiate the design, trial mixtures may be produced and tested using all of the proposed project materials and equipment prior to placement. The Engineer may waive trial mixtures if the same design has been proven to be in conformance with these requirements.

If a change in sources of materials is made, a new mix design will be established before the new material is used. When unsatisfactory results or other conditions make it necessary, the Engineer may request a new mix design.

The aggregate will be conditionally approved in the stockpile at the plant. The asphalt will be conditionally approved at the source. The mixture will be conditionally approved after blending and mixing at the micro surfacing machine, pending the results of all applicable final acceptance tests.

(b) **Mineral Aggregate.** The mineral aggregate shall be composed of clean and durable particles of 100% crushed traprock, granite, sandstone or other approved aggregates and shall meet the requirements as follows:

PHYSICAL PROPERTIES OF AGGREGATES

PROPERTY	LIMITS
L. A. Abrasion, % wear, maximum	40
Sand Equivalent, %, minimum	65
Mechanically Fractured Faces[a], %, minimum	100 w/2
Aggregate Durability Index, minimum	40
Insoluble Residue, %, minimum	65
Flat or Elongated Pieces[a,b], %, maximum	15
Natural Sand and Gravel, %, maximum	0
Clay Balls and Friable Particles, %, maximum	0
Soft Particles, %, maximum	5
Sticks or Roots, %, maximum	0

[a] Applies to the aggregate retained on the No. 4 (4.75 mm) sieve.

[b] A flat or elongated piece is one in which the length is greater than five times the average thickness.

(c) **Emulsified Asphalt.** The asphalt shall be a polymer modified PMCSS-1h (cationic) emulsified asphalt conforming to the provisions of Subsection 708.03, Table 5c.

(d) **Mineral Filler.** The mineral filler shall be a recognized brand of Portland cement that is free from lumps. It may be accepted upon visual inspection.

(e) **Water.** The water will be potable and will be free of harmful soluble salts. Water may be added as recommended by the emulsion manufacturer.

(f) **Other Additives.** Additives supplied and approved by the emulsion manufacturer may be added to the emulsion mix to provide control of the material in the field.

707.03. COMPOSITION OF MIXTURES.

The mixture system will be so formulated that it will cure sufficiently one (1) hour after mixing, at job site conditions, to allow traffic without damage to the mat. Additional curing may be required at locations such as driveways, intersections, or other areas where sharp turns, sudden accelerations or decelerations take place.

	TYPE I	TYPE II	TYPE III
SIEVE SIZE		**PERCENT PASSING**	
3/8 inch (9.5 mm)	100	99-100	98-100
No. 4 (4.75 mm)	98-100	80-94	75-85
No. 10 (2.00 mm)	68-86	40-60	45-55
No. 40 (425 µm)	22-41	12-30	15-25
No. 80 (180 µm)	10-25	8-20	8-15
No. 200 (75 µm)	5-15	5-15	2-8

Residual asphalt, by dry mass of aggregate: 6 - 9%
Mineral filler, by dry mass of aggregate: 1.0 - 3.0%
Water: as required to provide the specified properties.
Additives: as required to provide the specified properties.

707.04. TOLERANCES.

The limits in Subsection 707.03 establish the Specification ranges, except that the residual asphalt content of the mixture shall not vary more than ±0.5 percent from the job-mix formula when measured by the tank-strap method.

707.05. SAMPLING AND TESTING.

Sampling and testing shall be done in accordance with Subsection 708.06.